

Infusing Self-Determination into 18 – 21 Services for Students with Intellectual or Developmental Disabilities: A Multi-Stage, Multiple Component Model

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Abstract: The Individuals with Disabilities Education Act requires that States provide a free, appropriate public education to children with disabilities residing within that state between the ages of 3 and 21. The ages of 18 to 21 constitute a unique time for students with disabilities whose peers have left public schools for postsecondary education or employment. Despite that 18 to 21 services have been provided for many years, there is little information on such services and supports. We identified eight indicators of high quality 18-21 services, and then conducted a pilot evaluation of a multi-stage, multiple component model that focused on promoting self-determination and increasing student involvement in transition planning and implementation. Students with intellectual or developmental disabilities were involved in this model and achieved educationally relevant goals as well as enhanced perceptions of autonomy. This article overviews the model and the potential for its use to promote intensive interventions ensuring active student involvement.

Section 612 (State Eligibility) of the Individuals with Disabilities Education Act requires States to provide a free, appropriate public education to children with disabilities residing within that state between the ages of 3 and 21, except when its application to those children would be inconsistent with State law or practice. In most states, students with intellectual or developmental disabilities are eligible for services from the public school system be-

tween the ages of 18 and 21, after their same-age peers have graduated.

Given that these provisions have been in place since the initial implementation of P.L. 94-142, there is surprisingly little information in the literature about 18-21 services and supports. There is, however, a “common knowledge base” about best practices for students with mental retardation and severe disabilities (Beirne-Smith, Ittenbach, & Patton, 2001; Laughlin & Wehman, 1996; Snell & Brown, 1999) that might provide some “quality indicators” applicable to 18-21 services. While a systematic evaluation of potential quality indicators of 18-21 services has not been conducted, we would propose that findings from such an evaluation would include, at the least, the following:

Educational services for students with intellectual and developmental disabilities ages 18 – 21 are provided in age-appropriate environments allowing for social interaction and promoting community inclusion. One of the staples of a quality education for students with significant disabilities emphasized by Brown and colleagues (Brown et al., 1979, 1981, 1983; Ford et al., 1989) was that students should receive their

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education in an age-appropriate setting. The importance of this component was solidified with the subsequent movement to include all students with disabilities in age-appropriate, regular education classrooms in their neighborhood schools (Friend & Bursuck, 2002; Salend, 2001; Smith, Polloway, Patton, & Dowdy, 2004; Vaughn, Bos, & Schumm, 2003).

This created a dilemma for educators working with students with disabilities who were eligible for services through age 21 and for whom even the neighborhood high school was no longer age-appropriate and normative. The solution to this problem was to provide educational services in environments that are age-appropriate for these students and that allow them to interact with same-age peers. Such environments needed to provide the opportunity for students to become socially included in their communities. There have been a number of settings in which such services have been provided that meet these requirements. Perhaps the most prevalent is to provide educational supports in a community or junior college setting. This setting is normative for students in this age range and community colleges frequently offer unique learning opportunities and chances for frequent interactions with same-age peers without disabilities. Other settings in which 18-21 services have been provided include university and four-year college campuses and in community-based business or agency settings. McDonnell, Mathot-Buckner, and Ferguson (1996) noted "researchers have long recognized the need for age-appropriate programs for students between the ages of 18 and 21 with moderate to severe disabilities. It has become clear that program structures that allow access to regional vocational education centers, community colleges, four-year colleges, and community-based training programs will be necessary if the unique educational needs of this group are going to be addressed" (p. 25).

High quality educational services are ecologically valid and community-based. The key elements of exemplary programs for students with severe disabilities, again articulated through research in the 1980s (Brown et al., 1981, 1983; Ford et al., 1989; Guess & Helmstetter, 1986; Donnell & Hardman, 1985; Wilcox & Bellamy, 1982), were that instruction should occur in ecologically valid, community-based settings

and that the educational program should be tied to attainment of skills and knowledge that had functional value after the student left school. This meant that as students with intellectual and developmental disabilities got older, they would spend more of their instruction in community-based settings that approximated the environment in which they might live, work, learn or play as adults. By the time students are involved in 18-21 services and supports, they should spend virtually all of their time learning employment-related skills in work settings, living skills in homes, and recreation and leisure skills in the community.

High quality services are outcome-oriented. The 1992 amendments to IDEA required that transition services for students with disabilities be outcome-oriented and identified a wide array of possible outcomes, including employment, living, post-secondary education, and leisure outcomes. A key indicator of a quality education program for students ages 18 - 21 must, in the long run, be the degree to which students leave school to jobs, community-based living, and integration in their community.

Academic instruction in quality programs is functional and focused on outcomes. Students at this age continue to have many academic and content-oriented learning needs if they are to achieve their employment, living, or other goals. Best practice in education currently involves ensuring access to the general curriculum for students with disabilities so as to provide all students with access to a challenging curriculum, to ensure that students are held to high expectations, and to include students in school-reform accountability systems (Wehmeyer, Lance, & Bashinski, 2002; Wehmeyer, Lattin, & Agran, 2001). However, the 'general curriculum' for students ages 18-21 must be considered the functional skills and knowledge that the student still needs to live, work and play more independently. As such, educators must provide instruction in academic and other content areas in ways that promote functional skills in inclusive settings. Again, providing 18 to 21 services in a college setting, particularly in community and junior colleges, provides opportunities to access more basic and, sometimes, remedial classes with same age peers if such instruction is warranted. Otherwise, academic instruction should be infused into the community-based instruction.

Quality services emphasize person centered planning and active family involvement. The educational process for students must be individualized and have active participation from a range of key stakeholders. It is important that the student's family be actively involved in the educational program. Person centered planning procedures (Holburn & Vietz, 2002; Mount & Zwernick, 1988; O'Brien & O'Brien, 1992; Vandercook, York, & Forest, 1989) provide effective strategies to achieve this involvement. These processes provide a focus on the student's vision of his or her life in the community, the needs, interests and abilities of the student and his or her family, examine the resources available to the student, and set goals based on these factors (McDonnell et al., 1996).

Quality services involve active participation of adult service providers in planning and implementation. The transition mandates in IDEA require interagency collaboration in planning, particularly those agencies who will be serving the student. This partnership is often difficult to form, not the least because of squabbles about financial liability. High quality supports for students with mental retardation ages 18 – 21 have active involvement from service providing agencies and community businesses, where students may someday work or become customers.

Quality services implement best practice in transition. This rather catch-all indicator simply communicates that educational programs for students ages 18 – 21 with mental retardation are, at their core, transition programs, and the wealth of strategies associated with effective transition programs (Brolin, 1995; Rusch & Chadsey, 1998; Wehman, 2001), like job-shadowing, job-sampling, and leisure training, should be present in 18 – 21 programs as well.

Quality services foster active student involvement and promote self-determination. Active student involvement is a hallmark of quality transition planning (Wehmeyer & Sands, 1998) and it is perhaps nowhere more important than during these final years of school for this population. Moreover, promoting and enhancing self-determination has become best practice in educational services for students with disabilities (Field, Martin, Miller, Ward, & Wehmeyer, 1998; Wehmeyer, Abery, Mithaug, & Stancliffe, 2003; Wehmeyer, Agran, & Hughes, 1998) and has been linked to more

positive adult outcomes (Wehmeyer & Palmer, 2003; Wehmeyer & Schwartz, 1997).

Infusing Student Involvement and Self-Determination into High Quality 18 – 21 Supports

The focus of our work has centered on the final quality indicator, that of promoting student involvement and self-determination. To that end, we have been engaged in the development and evaluation of a multistage model, which we call *Beyond High School* and which is depicted in Figure 1, to infuse self-determination into quality 18 to 21 services and supports and to promote active student involvement. This article reports an evaluation of the model, which is described in this section.

Beyond High School Stage 1

This first stage of the *Beyond High School* model is designed to enable students to establish short and long term goals based on their own preferences, abilities, and interests. First, students are involved in targeted instruction teaching them to self-direct planning and decision-making specific to the transition process. This could be accomplished through multiple informal or formal strategies and methods that prepare students to participate in or direct their educational planning process. In the context of our evaluation of this model, students were involved in the *Whose Future is it Anyway?* curriculum (Wehmeyer & Kelchner, 1995a). Lessons in this curriculum were covered in a class offered to students ages 18 to 21 at the local community college, and included peer mentoring and support from same age peers without disabilities.

Next, students were taught to self-direct the transition goal-setting, action planning, and program implementation process using the *Self-Determined Learning Model of Instruction* (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000). Although there is insufficient space for a comprehensive description of this instructional model in this article (see Mithaug, Wehmeyer, Agran, Martin, & Palmer, 1998; Wehmeyer et al., 2000; Wehmeyer, Agran, Palmer, Mithaug, & Martin, 2003 for details on this model), the *Self-Determined Learning Model of Instruction* is a teaching model based

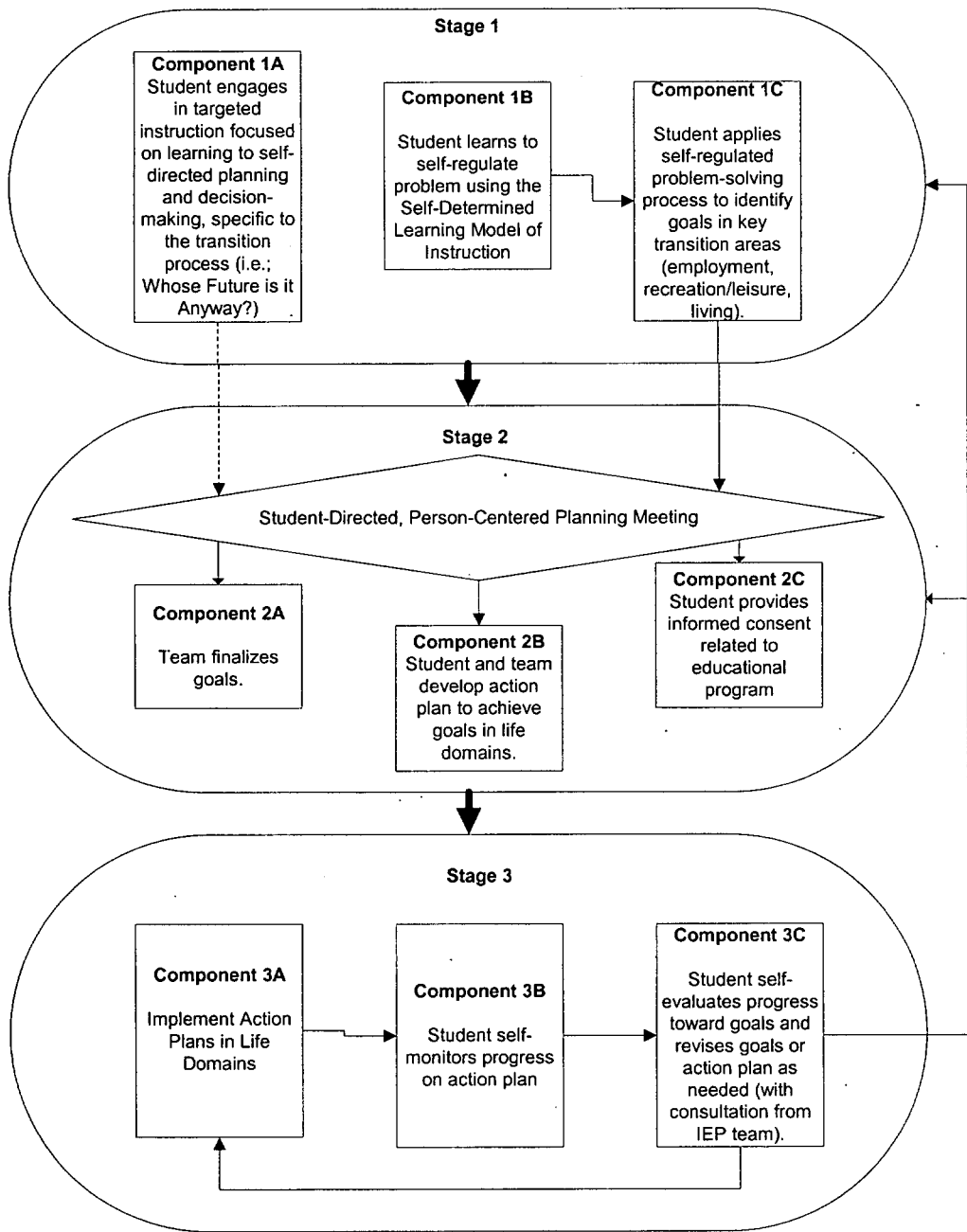


Figure 1. Multistage model infusing self-determination into 18-21 services and supports

on the principals of self-determination, self-regulation, and student-directed learning that enables teachers to teach students to self-direct the instructional process from goal setting through action planning to self-monitoring and self-evaluation. Students learn a series

of three sets of four self-instruction questions, each set of which forms a problem solving sequence that enables students to solve the problems: "What is my learning goal?" "What is my plan?" and "What have I learned?" As such, students are actively in control of the

learning process from goal setting through evaluation.

Once students learn this self-regulated learning process, they apply the first part of the *Self-Determined Learning Model of Instruction* (What is my goal?) to identify goals in key transition areas, including employment, independent living, recreation and leisure, and postsecondary education.

Beyond High School Stage 2

The second stage of the model involves convening a student-directed, person-centered planning meeting that brings together other stakeholders in the instructional process to work with students to refine goals, as needed, to support the student as he or she implements the second phase of the *Self-Determined Learning Model of Instruction* (What is my plan?), and to enable the student to provide informed consent with regard to implementation of the instructional program. This meeting is not intended to be the mandated IEP meeting, although these activities certainly can occur at an IEP meeting. Instead, the meeting bears a closer resemblance to person-centered planning process where stakeholders come together on a more frequent basis to identify hopes and dreams, to identify natural supports, and so forth (Holburn & Vietz, 2002). We have suggested previously that such planning is a hallmark of high quality 18–21 services and supports, so the processes to implement such a meeting should already be in place. This meeting varies from traditional person-centered planning meetings in scope, intent and process. First, it is intended that this is the student's meeting. The teacher or person-centered planning facilitator should support the student, but using skills he or she acquired in the first phase of the model, the student is to present goals he or she has generated. The second difference is that these student goals provide the foundation for the meeting's purpose and direction. Other stakeholders are encouraged to help the student refine the goals, more clearly define the goals, or identify objectives to reach goals, but not to criticize or replace goals. These goals will, likely, form only a subset of the total goals on a student's IEP, but the intent is that students have a forum to discuss their goals and gather support of parents, family members, teachers,

and others to make those goals achievable. This is also an opportune time to consider how each stakeholder can support and contribute to the student's efforts to attain those goals.

Beyond High School Stage 3

During the final stage of the model the student, with supports identified from the second stage, implements the plan, monitors his or her progress in achieving the goal, and evaluates success of the plan, making revisions to the goal or the plan as warranted. This is accomplished using the strategies and questions comprising the third phase of the *Self-Determined Learning Model of Instruction*.

This article reports a pilot evaluation of the Beyond High School model with adolescents served in an 18 to 21 program. This evaluation was designed to determine if students who were involved in the model could achieve educationally relevant goals across transition-related areas using a self-directed process, and to examine the impact of such activities on student self-determination and autonomy, thus examining the impact of the intervention on student involvement and self-determination.

Method

Participants

Participants were 15 students ages 18 to 21 served through a suburban school district. Seven students were female and eight were male. Mean age for this group at the start of the study (Fall, 2001) was 19.87 years ($SD = .58$). Females averaged 19.91 years of age ($SD = .28$) while males averaged 19.84 years of age ($SD = .77$). Mean IQ score for this group was 52 ($SD = 11.7$), with a mean of 43.85 ($SD = 6.17$) for males and a mean of 61.5 ($SD = 9.02$) for females. Of these 15, 13 students were labeled as having mental retardation and two students were identified as having a learning disability (although one of those students had a full-scale IQ score of 65).

Procedure

Students worked directly with project staff and school personnel to complete the process de-

scribed in the multi-stage, multiple component model. Students were enrolled in training on self-directing the planning process at the community college and received instruction on using the student questions in the *Self-Determined Learning Model of Instruction* from project staff. Implementation of the *Self-Determined Learning Model of Instruction* occurred at the community college. As per the model depicted in Figure 1, students completed the first stage by setting at least one learning goal in the domains of employment, living, recreation and leisure, and social relationships. This resulted in a total of 37 goals set by these 15 students. One student set only one goal, 6 set two goals, and 8 students set three goals. Across all 37 goals, there were 12 employment-related goals, 12 living goals, 8 leisure and recreation goals, and 5 social relationship goals. Students also had access to a CD-ROM based career and vocational interest inventory for non-readers to assist them in making decisions about preferred employment goals. Table 1 provides examples of student goals.

Once a student had completed the goal setting in the first stage, a meeting was convened (as described previously) to determine an action plan. In most cases, students had already developed a tentative action plan prior to the meeting. All such meetings except two were held in the main building on the

community college campus. The two exceptions were held at a city park and recreation center adjacent to the community college campus. Meetings were attended by persons identified and invited by the student, and this generally included (in addition to the student) project staff, at least one member of the school district faculty and, in one case, a non-disabled peer serving as a mentor to the student. In most cases all components of the second stage were completed in one session, although if need be multiple meetings were held. Most students used Microsoft PowerPoint™ to present their goals and tentative action plans to the team members. Subsequent to the meeting, project staff supported students to create a Microsoft Excel™ tracking form based on the steps in the action plan that they inserted into their daily planners provided by the district. This tracking served as the self-monitoring device for all students, although one student developed a more elaborate self-monitoring process and a second student needed icons added to the tracking form to enable him to use it.

Based on the action plan developed in Stage 2 of the *Beyond High School* model, students implemented components in Stage 3. Project staff met with students one-on-one at regularly scheduled times at least twice a week and, depending on the number of goals students had, more as needed. At these meetings, students presented self-monitoring data, discussed progress and barriers, and self-evaluated their progress toward the goal with support from staff. When students were not making progress, project staff utilized the *Self-Determined Learning Model of Instruction* questions to coach and support students to identify ways to remove barriers and make progress. This included supporting students to revise and narrow their original goal (as per the *SDLMI*) to a more achievable goal and/or revising the action plan if the goal was revised or deemed appropriate. In addition, project staff and district personnel provided instruction and support as identified in the action plan as needed, including providing community-based instruction experiences.

Instrumentation

Goal attainment scaling. To measure the degree to which each student achieved his or her

Table 1

Sample of student goals set during Stage 1

I will find out how to get moved into the electronics area at Wal-Mart.
I will use the YES program to find 3 jobs I might like to explore.
I will meet with a fireman to find out what is needed to become a fireman.
I will call 5 or 6 employers to find out if they have detailing jobs and what the job tasks are.
I will sign up for a First Aid/CPR class to get my certification.
I will interview 2 campus security officers to find out what they do.
I will observe and talk to people at 2 jobs I might be interested in and find out what they do.
I will make a list of things I need to be accessible in the workplace and will visit 2 or 3 places to find out if they are accessible.
I will write a budget based on my paycheck. I will learn how to use my budget.

educational goal, we used the goal attainment scaling (GAS) process. The GAS has been used to measure goal attainment and to determine program effectiveness (Kiresuk & Lund, 1978) and has been extended to special education (Carr, 1979). According to Carr, GAS "basically involves establishing goals and specifying a range of outcomes or behaviors that would indicate progress toward achieving those goals" (p. 89). GAS scores were determined by the following procedures.

Once students identified a goal, working through the first phase of the model, the teacher met with a project staff member to identify five possible goal outcomes for each goal using a five-point continuum ranging from the most unfavorable possible outcome to the most favorable possible outcome. Such goal outcomes are individually determined and can be described in quantifiable (e.g., percent correct attempts) or in less quantified (arrives to school with hair combed) terms. Each point on the five-point scale is assigned a value, beginning with -2 for the least favorable outcome, -1 for the less (not least) favorable outcome, 0 points for acceptable outcomes, +1 for favorable outcomes, and +2 for the most favorable outcome.

At the end of the instructional period (e.g., after students had received instruction using the model), teachers selected the outcome that best described the student's progress on the goal. Using a raw-score conversion key for Goal Attainment Scaling developed by Cardillo (1994), raw scores were converted to standardized *T*-scores (Kiresuk & Lund, 1978) with a mean of 50 and a standard deviation of 10. Transformation of raw scores to a standardized score allows comparison between goal areas across subjects independent of the particular goal area. When interpreting scores from the GAS, it is important to note that the converted mean *T*-score value of 50 represents an acceptable outcome, where an "acceptable" outcome means that students learned the goal or skills *to the level expected by the teacher*. Standardized scores of 40 or below indicate that the student did not achieve an acceptable outcome, and scores of 60 and above indicate that the student's progress exceeded expectations. GAS scores for students who worked on more than one goal were calculated by averaging standardized scores from the two goals.

Measuring self-determination. To examine the impact of involvement in the project activities on student self-determination, we administered two student self-report measures at the beginning and end of the study. Each student completed *The Arc's Self-Determination Scale* (Wehmeyer & Kelchner, 1995b). This scale is a 72-item self-report measure that provides data on each of four essential characteristics of self-determination identified by Wehmeyer and colleagues as defining self-determined behaviors (Wehmeyer, Kelchner, & Richards, 1996). The scale measures (a) student autonomy, including the student's independence and the degree to which he or she acts on the basis of personal beliefs, values, interests, and abilities; (b) student self-regulation, including interpersonal cognitive problem-solving and goal-setting and task performance; (c) psychological empowerment, and (d) student self-realization.

A second related measure involved a student self-report version of the *Autonomous Functioning Checklist* (Sigafoos, Feinstein, Damond, & Reiss, 1988). This is a 78-item scale that is subdivided into four conceptually distinct subscales: Self and Family Care, Management, Recreational Activity, and Social and Vocational Activity. Questions in the first three domains describe activities, in response to which respondents select one of five alternatives [(a) do not do; (b) do only rarely; (c) do about half the time there is an opportunity; (d) do most of the time there is an opportunity; and (e) do every time there is an opportunity]. The fourth domain poses questions with a yes/no answer. Likert-scale responses are scored from zero (do not do) to four (do every time), while dichotomous yes-no responses are scored with zero or one. High total (out of 252 possible) and subscale scores indicate that an individual exhibits behaviors associated with autonomy. Sigafoos et al. found that the subscales had high levels of internal consistency (*coefficient alpha* from .76 to .86). There were consistent and significant correlations between each subscale and adolescent leadership experience (.21 to .36) and three of four subscales and number of extracurricular activities (.34 to .45), providing further evidence for construct validity.

The *AFC* was originally developed as a parent report measure for adolescents, but was adapted by Wehmeyer and Kelchner (1995c)

as a self-report measure for adults by presenting instructions and items in first-person tense instead of second person. The five-point Likert format used in the original scale was maintained, with responses made singular and first person. Wehmeyer and Kelchner found that the factor structure of the self-report version replicated that of the original version and that this version had adequate criterion-related validity.

Analysis

Goal Attainment Scaling raw scores and *t*-scores were calculated using the process described earlier. Mean scores for all goals and by goal domain area were calculated to determine the impact on goal attainment. Pairwise *t*-tests were conducted for pre and post-intervention scores on the measures of self-determination and autonomous functioning.

Results

Mean GAS score for all 37 goals was 51.55 ($SD = 12.58$). Only 5.4% of the goal scores fell below 40 on the GAS scale, and only 40.5% of scores were below 50. Thus, 59.5% of GAS scores were at 50 and above, and 32.4% of scores were at 60 or above. Mean GAS score by student (e.g., average of GAS scores on multiple goals for each student was 51.70 ($SD = 7.7$). There were no significant differences in GAS scores by goal domain. Mean GAS score for employment related goals was 50.51 ($n = 12$, $SD = 9.48$). Mean score for living goals was 50.63 ($n = 12$, $SD = 14.07$) while for recreation goals the mean was 47.5 ($n = 8$, $SD = 13.88$). The highest mean score was for social relationship goals, with an average score of 62.68 ($n = 5$, $SD = 10.04$). There were no

significant differences between pre and post-treatment scores on *The Arc's Self-Determination Scale*, but there were significant differences on the *Autonomous Functioning Checklist* total scores and on 3 of 4 subscale scores, as indicated in Table 2.

Discussion

We believe that these findings provide preliminary support for the efficacy of the multi-stage, multiple component model to promote student involvement in transition planning and implementation for students ages 18 to 21. More generally, it illustrates that efforts to intensively involve students in their educational planning and decision-making can result in educational benefit. Prior to discussing these findings, we would note several limitations that must be considered when interpreting these results. First, this study involved a small sample of students without a control group. This, in turn, severely limits our ability to assign causality to the intervention in terms of outcomes and, thus, findings cannot necessarily be generalized to a broader population without subsequent research. In addition, we did not provide a measure of treatment fidelity, and future examinations such as this will need to do so.

Given these caveats, we believe that this initial evaluation of the process indicates that students ages 18 – 21 can and should be actively involved in all aspects of the educational program. For example, a job developer or specialist usually directs traditional job placement activities. In circumstances when these are high quality services, the job developer is acting based on knowledge of student interests and preferences because he or she has engaged the student in the process. However,

Table 2
Paired-sample *t*-test statistics for total and subscale *Autonomous Functioning Checklist* scores

AFC Domain	Mean Pretest	Mean Posttest	SD	<i>t</i>	df	<i>p</i>
Self & Family Care	39.86	53.93	17.4	-3.13	14	.007
Management	58.35	66.57	11.7	-2.63	14	.021
Recreation and Leisure	39.4	48.07	9.9	-3.36	14	.005
Social and Vocational Activities	13.67	15.67	4.6	-1.59	14	.132
Total Autonomous Functioning	152.28	187.15	29.8	-4.37	14	.001

in the Beyond High School process, it is the student who 'directs' the job identification, development and placement process through the action planning procedure. That is, the student is actively involved in the types of activities traditionally performed by job developers (with their support, of course) and may, in fact, perform some of those activities (e.g., making an initial contact with a potential employment site).

Students involved in this process were very successful at achieving self-set goals. As described earlier, GAS scores of 50 represent the outcome that students achieved goals at a level considered satisfactory by the teacher. In general, scores ranging from 40 to 60 are in line with acceptable performance. The mean score of 51.55 indicates that, on average, students performed satisfactorily. Only slightly more than 5% of scores were below 40, and thus clearly achieved less than expected, while almost 60% of scores were above 50 and almost one-third were at 60 or above, thus indicating that students had exceeded expectations. The process worked equally well across goal domains. In addition, pre- and posttest measures of autonomy showed that students increased their perceptions of their autonomy after involvement in the process. There were no significant changes in self-determination scores. However, *The Arc's Self-Determination Scale* is a global measure of self-determination, and it is often the case that a single intervention does not substantially alter total scores on this measure. We did not measure degree to which students gained skills in areas such as goal setting, problem solving or decision-making, but skill development in these areas was part of the process. We believe that over time learning these types of skills and engaging in these actions will enhance student self-determination.

Anecdotal information provides further evidence of the degree to which students benefited from the process. One student completed the recreation and leisure goal he had set (to contact a volunteer center to find out how to volunteer) and then followed up on that to identify a specific volunteer situation related to his preferences, applied for the position, underwent orientation and began the volunteer experience. Another student had as her goal to identify a list of questions and then interview a friend to determine if she would

make a good roommate. This student and her family had long term plans for her to room with this friend. In completing this goal, she recognized the need for her friend to interview her and then to discuss their mutual compatibility and did so. This student decided, in the end, that her friend might not be a compatible roommate for her or that there were issues they would need to resolve before that arrangement was made.

Active student involvement is a hallmark of high quality transition services. As students get older, it becomes more and more critical that they learn the skills needed to self-direct their life and that they have the opportunity to practice those skills. While the model we propose can, and probably should, be implemented earlier in students' educational careers, it is particularly important that such intensive efforts be part of the 18-21 process. The multi-stage, multiple component model we evaluated provides one means of providing that level of intensive support.

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